

REMARKS

I. Introduction

In response to the Office Action dated March 14, 2005, claims 4 and 16 have been canceled, claims 1, 11, and 23 have been amended, and 24-26 have been added. Claims 1-3, 5-10, and 12-26 are in the application. Re-examination and re-consideration of the application, as amended, is requested.

II. Claim Amendments

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for purposes of patentability.

III. The Cited References and the Subject Invention

A. The Collar Reference

U.S. Patent No. 6,020,796, issued February 1, 2000 to Collar et al. discloses a switching means for use on-board a spacecraft. The switching means has a first set of switches for receiving respective channel slots of de-multiplexed narrow band channels. The set of switches may be made up of four position switches 5.sup.1, 5.sup.2 etc. Switch 5.sup.2 may be connected straight through, or to the straight through positions of switches 5.sup.1 and or 5.sup.3 via interswitch connections. The same is possible with the second set of switches 6. A wide selection of the possible frequency slots is possible (for example eight out of sixteen) to allow routing among the amplifiers 9, 10, some of which are designated as redundant.

B. The Vannatta Reference

U.S. Patent No. 5,649,306, issued July 15, 1997 to Vannatta et al. discloses a portable radio housing incorporating diversity antenna structure. The radio communication device (50) has a housing having a first housing element (51) and a second housing element (53). The first housing element (51) is movable between an extended and a closed position. The radio communication

device has at least two antennas (112, 113). A switch (121) is provided that is operable to switch between a first antenna (112) and a second antenna (113) responsive to position of the first housing element (51). Preferably the first antenna (112) is disposed in the first housing element (51) and the second antenna (113) is disposed in the second housing element (53) or a battery housing (57).

C. The Vaisanen Reference

U.S. Patent No. 6,560,443, issued May 6, 2003 to Vaisanen et al. discloses antenna sharing switching circuitry for multi-transceiver mobile terminal and method therefor. The antenna switching circuitry features a first switching unit (SW1) which controllably couples a first transceiver port to either a first antenna port or a second antenna port; and a second switching unit (SW2) which controllably couples the second antenna port to either the first transceiver port, through the first switching unit (SW1), or to an input/output port of a second transceiver (12). According to this scheme, the second antenna port is coupled to the input/output port of the second transceiver (12) in a mode in which the second transceiver (12) is operational, the first transceiver port being decoupled from the second antenna port at this time, wherein the first transceiver port is coupled to the first antenna port and the input/output port of the second transceiver (12) is decoupled from the second antenna port, when the first transceiver is in a transmit mode, and wherein the first transceiver port is coupled to either of the first and second antenna ports, when the first transceiver (11) is in a receiving mode and the input/output port of the second transceiver (12) is decoupled from the second antenna port.

IV. Office Action Prior Art Rejections

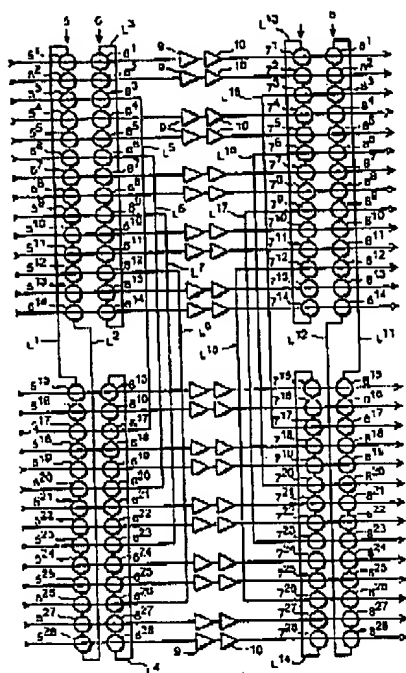
In paragraphs (3)-(4), the Office Action rejected claims 1-23 under 35 U.S.C. § 102(b) as being anticipated by Collar et al., U.S. Patent No. 6,020,796 (Collar).

With Respect to Claims 1-10: As amended, claim 1 recites:

*An transponder system, comprising:
an amplifier network having a plurality of amplifiers;
an antenna network, comprising a plurality of antennae;
an output switching network, including a first output switching network switch, selectably coupling one of the amplifiers to one of the plurality of antennae at a first output switching network switch first switch state and to a second output switching network switch in a first output switch network switch second switch state; and*

wherein the second output switching network switch is selectably coupled to a second one of the plurality of antennae in a second output switching network switch first switch state and to a third one of the plurality of antennae in a second output switching network switch second switch state.

According to the Office Action, all of the foregoing is disclosed by the Collar reference as follows:



The Applicants respectfully traverse these rejections. The foregoing switching network architecture is essentially analogous to the switching network the Applicant identified as prior art, namely:

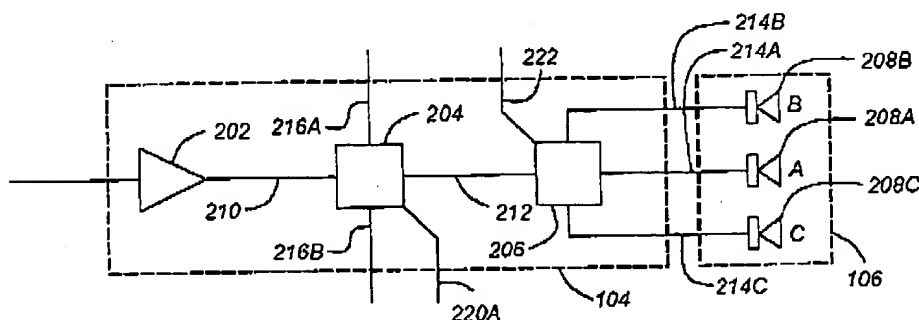


FIG. 2
PRIOR ART

This is a dual-rail switching network (with a plurality of switches 204, arranged vertically making one "rail" and a plurality of switches 206, arranged vertically making the second rail). This network, while effective, has particular disadvantages, as discussed in the Applicants' specification:

By appropriate selection of switches 204 and 206 via switch signals 220A and 222, the signal from the amplifier 202 can be provided to any of the antennae 208A-208C. However, in doing so, the resulting signal path must pass through at least two switches (namely, switch 204 and switch 206. Further, it is not possible to provide a signal from amplifier 202 to antenna 208A, while also providing a signal from another amplifier in the switching network 104 to antenna B 208B. (Specification, page 5, line 27 - page 6, line 2)

The Applicants have amended claim 1 to recite that the output-switching network is a single rail network to further clarify this point. The Collar reference discloses a rather typical dual rail system and therefore teaches away from the Applicants' invention.

In rejecting claim 4 (which, as originally presented, recited the single rail configuration), the Office Action relied on the following passage of the Collar reference:

There are twenty-eight switches in a first row of switches 5 (the left-hand vertical now as seen in FIG. 3), and each is a four port switch as illustrated in FIGS. 4a-4e. The switches of the row 5 are designated as follows--5.sup.1, 5.sup.2, 5.sup.3, 5.sup.4, 5.sup.5, 5.sup.6, 5.sup.7, 5.sup.8, 5.sup.9, 5.sup.10, 5.sup.11, 5.sup.12, 5.sup.13, 5.sup.14, 5.sup.15, 5.sup.16, 5.sup.17, 5.sup.18, 5.sup.19, 5.sup.20, 5.sup.21, 5.sup.22, 5.sup.23, 5.sup.24, 5.sup.25, 5.sup.26, 5.sup.27, 5.sup.28. The row is shown in two sections.

The first port of each switch in the row 5 connects to a respective de-multiplexed channel slot, of which fourteen are active.

The third and fourth ports of the switches are interconnected and two links L.sup.1, L.sup.2 complete the ring.

The second ports of the switches of the row 5 are connected to first ports of four port switches of a row 6. The switches of the row 6 are designated as follows--6.sup.1, 6.sup.2, 6.sup.3, 6.sup.4, 6.sup.5, 6.sup.6, 6.sup.7, 6.sup.8, 6.sup.9, 6.sup.10, 6.sup.11, 6.sup.12, 6.sup.13, 6.sup.14, 6.sup.15, 6.sup.16, 6.sup.17, 6.sup.18, 6.sup.19, 6.sup.20, 6.sup.21, 6.sup.22, 6.sup.23, 6.sup.24, 6.sup.25, 6.sup.26, 6.sup.27, 6.sup.28. The row 6 is next to the row 5. The switches of the row 6 are also as illustrated in FIGS. 4a-4e. The third and fourth ports of the switches of the row 6 are also interconnected. In this case, the switches are contained in two rings, not one as for the switches 5, links L.sup.3 and L.sup.4 completing the ring. (col. 3, line 63- col. 4, line 18)

The Applicants respectfully disagree that the foregoing discloses a single rail configuration.

Claims 2-3 and 5-10 recite the features of claim 1 and are patentable for the same reasons.

With Respect to Claims 11-15 and 17: Claim 11 recites a single rail output switching network, communicatively coupling any of the second devices with any of the first devices. As described above, the Collar reference discloses a dual-rail switching device and hence, teaches away from the Applicants' invention.

Claims 12-15 and 17 recite the features of claim 11 and are patentable on the same basis.

With Respect to Claims 18-19: Claim 18 recites:

*A method of providing a signal to any one of a plurality of output devices, comprising the steps of:
receiving the signal in a first switch;
selectably coupling the signal to a first output device or a second switch via a first switch according to a first switch selection; and
selectably coupling the signal from the first switch to a second output device or a third output device if the signal is not coupled to the first output device via the second switch according to a second switch selection.*

Claim 18 recites the step of selectably coupling the signal to a first output device or a second switch via a first switch according to a first switch selection. The Collar reference discloses a system in which the signal (presumably from one of the amplifiers) is selectably coupled to a second switch (in the adjacent rail) or a third switch (in the same rail) according to the first switch selection. Further, the Collar reference discloses selectably coupling the signal from the first switch to yet another switch (not an output device). Accordingly, the Applicants respectfully traverse.

Claim 19 recites the features of claim 18 and is patentable on the same basis.

Claims 22-23 recite analogous features and are patentable for the same reasons.

With Respect to Claims 20-22: Claim 20 recites a first switch for receiving the signal and selectably coupling the signal to a first output device or a second switch via the first switch according to a first switch selection. As described above, the Collar reference discloses a system in which the signal (presumably from one of the amplifiers) is selectably coupled to a second switch (in the adjacent rail) or a third switch (in the same rail) according to the first switch selection. Further, the Collar reference discloses selectably coupling the signal from the first switch to yet another switch (not an output device). Accordingly, the Applicants respectfully traverse.

Claims 21-22 recite the features of claim 20 and is patentable on the same basis.

In paragraph (5), the Office Action rejected claims 11, 18, and 20 under 35 U.S.C. §102(b) as being anticipated by Vannatta et al., U.S. Patent No. 5,649,306 (Vannatta).

With Respect to Claim 11: Claim 11 recites a single rail switching network. The Applicants do not believe the Vannatta reference reasonably discloses anything analogous to a rail switching network. In any case, as amended, claim 11 recites that the first device network is an antenna network and the second device network is an amplifier network. None of these features are disclosed. Accordingly, the Applicants respectfully traverse.

With Respect to Claims 18 and 20: Claim 18 recites a system providing a signal to a plurality of output devices. The Vannatta reference discloses a transceiver that shares antennas (using them for a simplex transmit and receive mode) ... however, antenna 106 is not an output device ... it is a receive antenna, and therefore, relative to the switch 130, an output device. The analysis with respect to claim 20 is analogous.

In paragraph (6), the Office Action rejected claims 11, 18, and 20 under 35 U.S.C. §102(e) as being anticipated by Vaisanen et al., U.S. Patent No. 6,560,443 (Vaisanen).

With Respect to Claims 11, 18, and 20: The Vaisanen reference is similar the Vannatta reference in that it does not disclose switching among three output devices, but rather, a system for switching between an input device and an output device for transmit and receive operations. Accordingly, the rejections of claims 11, 18 and 20 are traversed for the same reasons.

V. Dependent Claims

Dependent claims 2-3, 5-10, 12-15, 17, 19, 21, and 23 incorporate the limitations of their related independent claims, and are therefore patentable on this basis. In addition, these claims recite novel elements even more remote from the cited references. Accordingly, the Applicants respectfully request that these claims be allowed as well.

VI. New Claims

New claims 24-26 are presented for the first time in this Amendment. For the reasons described above, new claims 24-26 are patentable over the prior art of record, and the Applicants respectfully request the allowance of these claims as well.

VII. Conclusion


In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited. Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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